313IHSSF230

DocumentID	NONCD0002799
Site Name	WRIGHTSVILLE AVE
DocumentType	SITE ASSESSMENT PLAN (SAP)
RptSegment	3
DocDate	3/6/2009
DocRcvd	3/23/2009
Box	SF230
AccessLevel	Public
Division	Waste Management
Section	Superfund
Program	IHS (IHS)
DocCat	Facility

PHOTOGRAPHS

Photograph No. 1
View of the site, facing south.

Photograph No. 2
View of the pieces of brick and concrete from the demolition of the former on-site building.

Photograph No. 3
View of metal debris removed from the site excavation.

Photograph No. 4
View of the northern adjacent American Tire Distributor property.

Photograph No. 5
View of buried debris, such as brick and concrete.

Photograph No. 6
View of the eastern adjacent single-family residential structure.

PHOTOGRAPHS

Photograph No. 7
View of the southern adjacent single-family residential structures.

Photograph No. 8
View of the southwester adjacent Wilmington Christian Martial Arts building.

Photograph No. 9
View of the western adjacent Azalea Gas building.

Photograph No. 10
View of the western adjacent propane tanks.

AMY DESAIX CONCHAS
Project Scientist

EDUCATION
B.S. Natural Resources, 1999
The University of the South, Sewanee, TN

REGISTRATIONS
NC and SC Asbestos Inspector
OSHA 40 Hour and 8 Hour Training
NC Well Contractor Certification # 3482

WORK EXPERIENCE
She has project responsibilities that include client contact to identify project requirements, preparation of proposals, project execution, and development of recommendations. Work experience consists of asbestos inspections; environmental site assessments (Phase I and Phase II environmental site assessments); soil and groundwater studies; remediation services. Project sites have included residential, commercial, municipal and industrial facilities.

Representative sampling of recent key assignments and experience

- **ENVIRONMENTAL ASSESSMENTS** – Mrs. Conchas has eight years of experience and has performed over 100 Phase I and Phase II environmental assessments to determine environmental liabilities for Real Property Transfers. She has performed environmental liability assessments in North Carolina, South Carolina and, Georgia. She has experience performing preliminary environmental site assessments to evaluate on-site and off-site concerns that may impact the site. Mrs. Conchas has managed numerous phase II environmental site assessments including both soil and groundwater investigations. Types of assessments include leaking underground storage tanks (USTs), oil and hazardous material spills, and wastewater discharges. On-site activities include locating and drilling soil borings, collecting and screening soil samples, installing monitoring wells and collecting groundwater samples.

- **UST ASSESSMENT** – Mrs. Conchas has performed numerous underground storage tank assessments, including Limited Site Assessments, Comprehensive Site Assessments, and Corrective Action Plans at both active and inactive service stations. This work includes accurately locating USTs and utilities; locating and drilling soil borings, collecting and screening soil samples; installing, developing and sampling groundwater monitoring wells; and evaluating data to determine the presence or absence of impact and determine the best method for remediation.

- **ENVIRONMENTAL CONSULTING** – Mrs. Conchas has consulted with clients and performed environmental assessments on numerous commercial, industrial and government projects. Mrs. Conchas is a certified asbestos inspector and performs asbestos surveys on residential and commercial buildings and industrial facilities for both renovations and demolitions.

MEMBERSHIPS IN PROFESSIONAL ASSOCIATIONS
2004-2008 Groundwater Professionals of North Carolina (GWPNC)

CHERYL J. MOODY, REM, CIEC, CMRS
Principal Scientist

EDUCATION
B.S., Biology, University of Vermont, 1990
M.S., Environmental Science, University of New Haven, 1997

REGISTRATION AND CERTIFICATION
Registered Environmental Manager (National Registry of Environmental Professionals)
Certified Indoor Environmental Consultant
Certified Mold Remediator Supervisor
North Carolina and South Carolina Certified Asbestos Inspector
North Carolina Asbestos Management Planner
Stormwater BMP Inspection and Maintenance Certification (North Carolina)

RELATED COURSE WORK
OSHA 40 Hour and 8 Hour Training

EXPERIENCE
Ms. Moody has over 17 years of experience in conducting and managing environmental site assessments, subsurface investigations, and remediation projects. Her work experience consists of asbestos inspections, air quality services for industrial facilities, mold assessments, evaluation and testing for occupational/chemical exposures during manufacturing processes, environmental site assessments (Phase I and Phase II environmental site assessments); FCC environmental compliance checklists/NEPA studies; HUD noise studies, soil and groundwater studies; remediation services; indoor air quality evaluations and compliance services; Project sites have included residential, commercial, municipal, landfills and industrial facilities. She has performed subsurface investigations involving development of subsurface investigation plans, preparing health and safety plans. She has been involved with UST removals, soil excavations and extensive well installations with hollow-stem auger, mud rotary, and air rotary drill rigs. She has performed Management Systems Audits for the Massachusetts Highway Department, and limited environmental risk assessment evaluations. Ms. Moody has also performed numerous compliance and environmental management services for agricultural and manufacturing clients that include evaluation of the operating practices and environmental management systems in place at the facilities.

Representative sampling of recent key assignments and experience

- **ENVIRONMENTAL CONSULTING** – Ms. Moody has consulted with clients and performed environmental assessments on numerous commercial, industrial and government projects. Services performed include compliance with SARA Title III, NEPA, environmental testing and analysis of soil and ground water, Phase I and Phase II Environmental Assessments, groundwater monitoring and remediation, hazardous waste material assessment, health and safety plans, permitting and regulatory compliance, RCRA/CERCLA compliance, risk assessments and underground storage tank (UST) assessment and removal.

- **ENVIRONMENTAL SITE ASSESSMENTS** – Ms. Moody has managed hundreds of Phase I and II environmental site assessments including both soil and groundwater investigations. Types of assessments include leaking underground storage tanks (USTs), oil and hazardous material spills, wastewater discharges, and unpermitted solid/hazardous waste dump sites. On-site activities include locating and drilling soil borings, collecting and screening soil samples, soil gas surveys, installing monitoring wells and collecting groundwater samples. Ms. Moody uses the data collected from soil and groundwater sample analyses to determine the area impacted and to recommend further assessment or remediation activities, if necessary.

- **UNDERGROUND STORAGE TANKS** – Ms. Moody has managed numerous underground storage tank (UST) assessments and removals. She has performed numerous Limited Site Assessments (LSAs) and Comprehensive Site Assessments (CSAs) to determine location of groundwater contamination plumes for gasoline, fuel oil and motor oil, and recommendations for corrective action plan for clean-up, including cost estimates, etc. and actual installation of remediation systems.

- **GROUNDWATER MONITORING/REMEDIATION** – Ms. Moody has completed corrective action plans to remediate contaminated groundwater. Hydrogeological studies have involved the installation of monitoring wells, ground-water monitoring and sampling, aquifer testing (aquifer, step-drawdown, specific capacity and slug tests), and pilot testing (air sparging and vapor extraction).

- **REGULATORY COMPLIANCE AUDITS** - Ms. Moody has conducted regulatory compliance audits of textile mills, manufacturing facilities and certified animal feed lots in North and South Carolina. Audits have focused on status of compliance with environmental programs, and have included corrective action guidance and cost estimates for implementation.

- **NATURAL RESOURCES** - Ms. Moody has conducted numerous Environmental Assessments for local Housing and Urban Development (HUD) departments per the US Department of Housing and Urban Development Environmental Review Record, Modified Format II. Ms. Moody has also conducted numerous NEPA and noise studies.

MEMBERSHIPS IN PROFESSIONAL ASSOCIATIONS

Indoor Air Quality Association Member
National Registry of Environmental Professionals

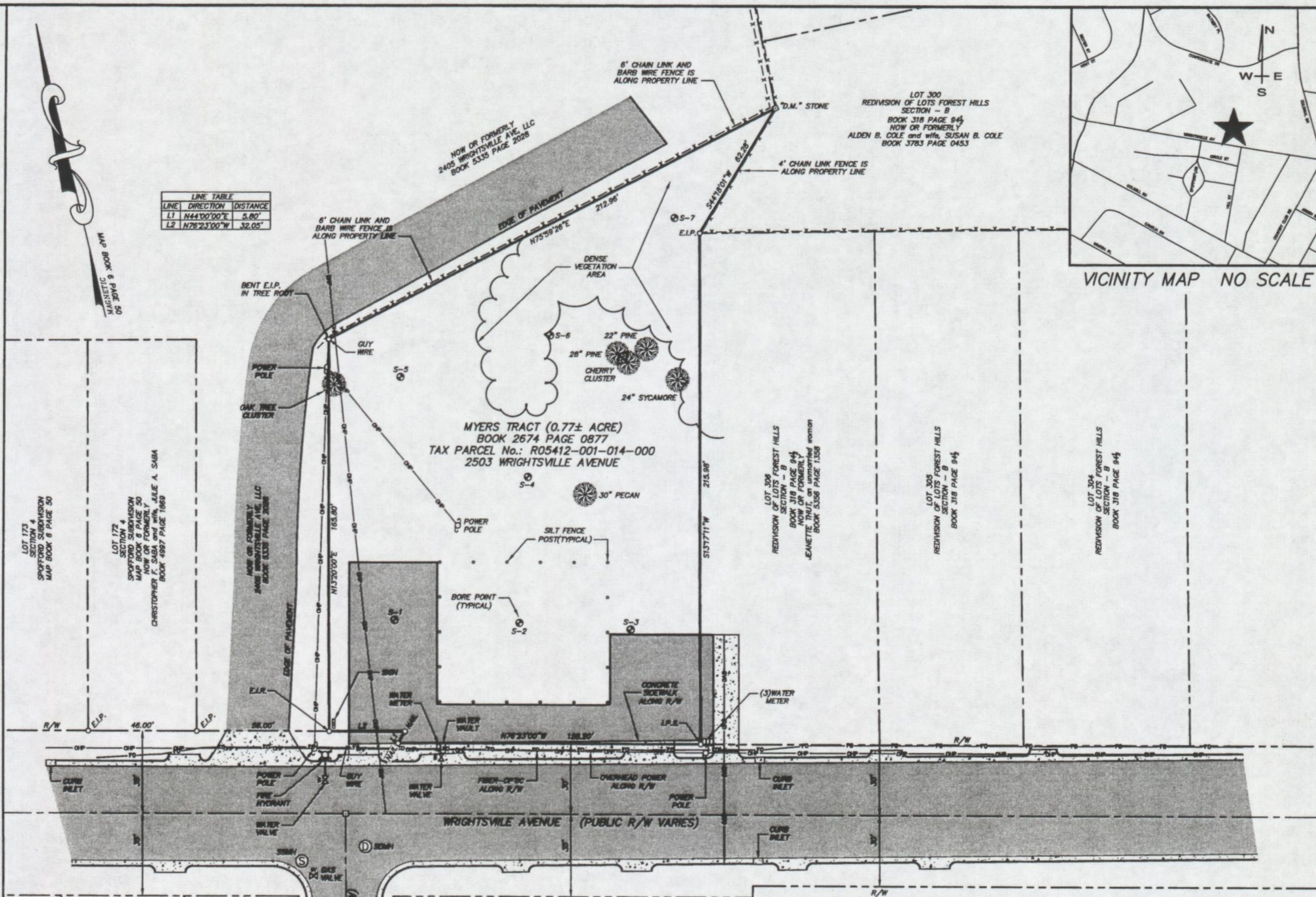
APPENDIX C – SURVEY PLAT

NOTES:
1.) THE SUBJECT PROPERTY "DOES NOT" LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY. SAID DESCRIBED PROPERTY IS LOCATED WITHIN AN AREA HAVING A ZONE DESIGNATION "X"(OTHER AREAS) BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), ON PANEL No. 3127, FLOOD INSURANCE RATE MAP NO. 3720312700 J WITH A EFFECTIVE DATE OF APRIL 3, 2006, FOR COMMUNITY NO. 370171, IN THE CITY OF WILMINGTON STATE OF NORTH CAROLINA, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PREMISES IS SITUATED.
2.) ALL DISTANCES ARE GROUND HORIZONTAL.
3.) NO N.C.G.S. FOUND WITHIN 2000'.
4.) REFERENCE: SURVEY AND MAP SUBJECT TO ANY EASEMENTS OF RECORD; INFORMATION THAT WOULD BE DISCLOSED BY A CURRENT TITLE OPINION.

LEGEND:

E.I.P.	EXISTING IRON PIPE
E.I.R.	EXISTING IRON REBAR
I.P.S.	IRON PIPE SET
O	PROPERTY CORNER
R/W	RIGHT-OF-WAY
OHP	OVERHEAD POWER
FO	FIBER-OPTIC
SSMH	SANITARY SEWER MANHOLE
SDMH	STORM DRAIN MANHOLE
—GAS—	GAS
—OHP—	OVERHEAD POWER
—X—X—	FENCE LINE
—FO—	FIBER-OPTIC
—o—	BOUNDARY LINE
	CONCRETE AREA
	ASPHALT AREA
	GRAVEL AREA

SURVEY REFERENCE
BOOK 318 PAGE 94 1/2
MAP BOOK 6 PAGE 50
BOOK 2674 PAGE 0877



GRAPHIC SCALE: 1"=20'
20 0 20 40 60

PLAT OF SURVEY FOR:

MYERS TRACT (0.77± ACRE)
BOOK 2674 PAGE 0877
TAX PARCEL No.: R05412-001-014-000
2503 WRIGHTSVILLE AVENUE

WILMINGTON TOWNSHIP NEW HANOVER COUNTY
WILMINGTON, NORTH CAROLINA

CLIENT: ECS CAROLINAS, LLP
7211 OGDEN BUSINESS PARK, SUITE 201
WILMINGTON, NC 28411
OFFICE: (910)686-9114
FAX: (910)686-9666
E-Mail:

MICHAEL UNDERWOOD and ASSOCIATES, PA
102 CINEMA DRIVE, SUITE C
WILMINGTON, NC 28403
PHONE: 910-815-0650
FAX: 910-815-0393
E-MAIL: muo@bizec.rr.com

SURVEYED:	APPROVED: M.N.U.
DRAWN BY: W.C.	DATE: JAN. 2008
CHECKED BY: M.N.U.	SCALE: 1"=20'

PRELIMINARY
NOT FOR REAL ESTATE
SALES OR CONVEYANCE

CERTIFICATE:
THIS SURVEY IS OF AN EXISTING PARCELS OF LAND AND DOES NOT CREATE A NEW STREET OR CHANGE AN EXISTING STREET.

JANUARY 8, 2008
MICHAEL N. UNDERWOOD, P.L.S. L-2962 DATE

NORTH CAROLINA
NEW HANOVER COUNTY

I, MICHAEL N. UNDERWOOD, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION DESCRIPTION AS NOTED ON THE FACE OF THIS PLAT RATIO OF PRECISION AS CALCULATED BY COMPUTER IS 1/10,000 + THAT THE BOUNDARIES NOT SURVEYED ARE SHOWN BY BROKEN LINES PLOTTED FROM INFORMATION REFERENCED THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH "THE STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH CAROLINA" WITNESS MY ORGINAL SIGNATURE, LICENSE NUMBER AND SEAL THIS 8TH DAY OF JANUARY A.D. 2008

PRELIMINARY NOT FOR REAL ESTATE SALES OR CONVEYANCE

MICHAEL N. UNDERWOOD, P.L.S.
LICENSE NUMBER L-2962
SEAL OR STAMP

APPENDIX D – REGULATORY AGENCIES CORRESPONDENCE RECORDS

NC Division of Parks and Recreation

Project Name: Remedial Investigation Work Plan for Site ID# NONCD0002799
Address: 2501, 2503, 2505, 2507 and 2509 Wrightsville Avenue

Please state whether the following are/are not located on the site or adjacent properties:

	Are	Are Not
State Parks		✓
Areas Important to Maintenance of Unique Natural Communities		✓
Sensitive areas Identified Under the National Estuary Program		✓
Designed State Natural Areas		✓
State Seashore, Lakeshore and River Recreational Areas		✓
Rare Species (state and federal Threatened and Endangered)		✓

Comments/Conditions/Concerns: No concerns to NHP

Dec. 8, 2008
Date

Harry E. LeBrand, Jr.
(Officials Signature)

Harry E. LeBrand, JR
(Officials Name – Print or Type)

Zoologist, NC Natural Heritage Program
(Official's Title)

NC DENR
(Department Name)

NCDENR
North Carolina Department of Environment and Natural Resources
Division of Parks and Recreation

Beverly Eaves Perdue, Governor | Dee Freeman, Secretary | Lewis Ledford, Director

February 20, 2009

Ms. Amy Conchas, REM
ECS Carolinas, LLP
7211 Ogden Business Park, Suite 201
Wilmington, NC. 28411

Dear Ms. Conchas:

The North Carolina Division of Parks and Recreation (DPR) has reviewed your site location for Site ID# NONCD0002799 with address listings of 2501, 2503, 2505, 2507, and 2509 Wrightsville Avenue in Wilmington, New Hanover County, North Carolina. Per the site information you sent via your email on February 12, 2009, we did not find records of Sensitive Habitats listed within or adjacent to your site.

Please contact me if you require additional information.

Sincerely,

Amin K. Davis

Amin K. Davis
Environmental Review Coordinator
Division of Parks and Recreation, Natural Resources Program
North Carolina Department of Environment and Natural Resources
(919) 715-7584

1615 Mail Service Center, Raleigh, North Carolina 27699-1615
Phone: 919-733-4181 \ FAX: 919-715-3085 \ Internet: www.ncparks.gov

NOAA

Project Name:	Remedial Investigation Work Plan for Site ID# NONCD0002799
Address:	2501, 2503, 2505, 2507 and 2509 Wrightsville Avenue
	Wilmington, New Hanover County, North Carolina

Please state whether the following are/are not located on the site or adjacent properties:

	Are	Are Not
Marine Sanctuaries	☐	☒

Comments/Conditions/Concerns The closest Natl. Marine Sanctuary is the MONITOR, which is located 16 miles South-Southeast of the Cape Hatteras lighthouse. Since your remedial site is located well upland, it doesn't appear there will be an impact.

2/10/09 Brady Phillips
Date (Officials Signature)

Brady Phillips
(Officials Name – Print or Type)

National Constituent and Partnership Coordinator
(Official's Title)

National Oceanic and Atmospheric Administration
(Department Name)

Office of National Marine Sanctuaries

North Carolina Department of Cultural Resources

State Historic Preservation Office

Peter B. Sandbeck, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary
Jeffrey J. Crow, Deputy Secretary

Office of Archives and History
Division of Historical Resources
David Brook, Director

January 6, 2009

Amy Conchas
ECS Carolinas
7211 Ogden Business Park
Suite 201
Wilmington, NC 28411

Re: Remedial Investigation Work Plan, 2501, 2503, 2505, 2507, & 2509 Wrightsville Avenue, Wilmington, New Hanover County, ER 08-2900

Dear Ms. Conchas:

Thank you for your letter of December 1, 2008, concerning the above project.

We have conducted a review of the proposed undertaking and are aware of no historic resources that would be affected by the project. Therefore, we have no comment on the undertaking as proposed.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579. In all future communication concerning this project, please cite the above referenced tracking number.

Sincerely,

Peter B Sandbeck MPM

Peter Sandbeck

From: Anita_Barnett@nps.gov
Sent: Tuesday, February 17, 2009 09:15 am
To: AConchas
Subject: Re: FW: Remedial Investigation Work Plan

Ms Conchas,

The National Park Service has reviewed your request for Remedial Investigation Work Plan for Site ID# NONCD0002799 at 2501, 2503,2505,2507 and 2509 Wrightsville Avenue Wilmington, New Hanover County, North Carolina. This project is not located on or adjacent to any properties owned or managed by the National Park Service.

Thank you for including the National Park Service in your review. Please contact Anita Barnett at 404-562-3124, extension 705, if you have further questions.

Anita Barnett
National Park Service
Planning and Compliance Division
Southeast Regional Office
100 Alabama Street,
1924 Building
Atlanta GA 30303

US Forest Service

Project Name: Remedial Investigation Work Plan for Site ID# NONCD0002799
Address: 2501, 2503, 2505, 2507 and 2509 Wrightsville Avenue
Wilmington, New Hanover County, North Carolina

Please state whether the following are/are not located on the site or adjacent properties:

	Are	Are Not
Designated and Proposed Federal Wilderness and Natural Areas		X
National Preserves and Forests		X
Federal Land Designated for the Protection of Natural Ecosystems		X

Comments/Conditions/Concerns

12-8-08
Date

Ruth Berner
(Officials Signature)

Ruth Berner
(Officials Name – Print or Type)

Planner
(Official's Title)

National Forests in North Carolina
(Department Name)

AConchas

From: Melanie Williams [Melanie.Williams@ncmail.net]
Sent: Tuesday, December 02, 2008 08:46 am
To: AConchas
Subject: Re: Remedial Investigation Work Plan

These sites on Wrightsville Ave. are not in an environmentally significant area.

Melanie Williams

AConchas wrote:

> Ms. Williams,
>
> I have attached a form and figures of the site. You can email or fax back the form. Please let me know if you have any questions.
>
> **Amy C. Conchas, REM**
> Environmental Department Manager
>
> **ECS Carolinas, LLP**
>
> **WILMINGTON**
> 7211 Ogden Business Park
> Suite 201
> Wilmington, NC 28411
> 910.686.9114 Office
> 910.686.9666 Fax
> 910.520.2141 Mobile
>
> **SWANSBORO**
> 1048 West Corbett Avenue
> Swansboro, NC 28584
> 910.326.2627 Office
> 910.326.2647 Fax
>
> **LITTLE RIVER, SC***
> 4239 Exchange Street
> Suite B
> Little River, South Carolina 29566
> (843) 399-0395 [Office]
> (843) 399-0389 [Fax]
> *Testing Services Only
>
> AConchas@ecslimited.com
> http://www.ecslimited.com
>
>

hereof must not be disclosed to any other person.

--
Melanie Williams
Basin Planner
NCDENR Division of Water Quality
Basinwide Planning Unit
1617 Mail Service Center
Raleigh, North Carolina 27699-1617
Melanie.Williams@ncmail.net
Phone: 919-807-6447
http://h2o.enr.state.nc.us/basinwide

ECS LLP CAROLINAS

CALCULATION SHEET

PROJECT: Wrightsville Ave REC			FIGURE NO.
TITLE:			JOB NO.
			SCALE:
BY:	DATE: 12-4-08	APPROVED BY:	DATE

Chris Carlson with the NC Division of forest service

- he left me a voicemail saying they do not have state preserves and forests in New Hanover County.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

December 19, 2008

Amy Conchas
ECS Carolinas, LLP
7211 Ogden Business Park
Suite 201
Wilmington, NC 28411

Re: Remedial Investigation Work Plan (RIWP) for a contamination site in Wilmington, NC

Dear Ms. Conchas:

This letter is to inform you that a list of all federally-protected endangered and threatened species with known occurrences in North Carolina is now available on the U.S. Fish and Wildlife Service's (Service) web page at http://www.fws.gov/raleigh. Therefore, if you have projects that occur within the Raleigh Field Office's area of responsibility (see attached county list), you no longer need to contact the Raleigh Field Office for a list of federally-protected species.

Our web page contains a complete and frequently updated list of all endangered and threatened species protected by the provisions of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.)(Act), and a list of federal species of concern[1] that are known to occur in each county in North Carolina.

Section 7 of the Act requires that all federal agencies (or their designated non-federal representative), in consultation with the Service, insure that any action federally authorized, funded, or carried out by such agencies is not likely to jeopardize the continued existence of any federally-listed endangered or threatened species. A biological assessment or evaluation may be prepared to fulfill that requirement and in determining whether additional consultation with the Service is necessary. In addition to the federally-protected species list, information on the species' life histories and habitats and information on completing a biological assessment or evaluation and can be found on our web page at http://www.fws.gov/raleigh. Please check the web site often for updated information or changes.

---

[1] The term "federal species of concern" refers to those species which the Service believes might be in need of concentrated conservation actions. Federal species of concern receive no legal protection and their designation does not necessarily imply that the species will eventually be proposed for listing as a federally endangered or threatened species. However, we recommend that all practicable measures be taken to avoid or minimize adverse impacts to federal species of concern.

If your project contains suitable habitat for any of the federally-listed species known to be present within the county where your project occurs, the proposed action has the potential to adversely affect those species. As such, we recommend that surveys be conducted to determine the species' presence or absence within the project area. The use of North Carolina Natural Heritage program data should not be substituted for actual field surveys.

If you determine that the proposed action may affect (i.e., likely to adversely affect or not likely to adversely affect) a federally-protected species, you should notify this office with your determination, the results of your surveys, survey methodologies, and an analysis of the effects of the action on listed species, including consideration of direct, indirect, and cumulative effects, before conducting any activities that might affect the species. If you determine that the proposed action will have no effect (i.e., no beneficial or adverse, direct or indirect effect) on federally listed species, then you are not required to contact our office for concurrence (unless an Environmental Impact Statement is prepared). However, you should maintain a complete record of the assessment, including steps leading to your determination of effect, the qualified personnel conducting the assessment, habitat conditions, site photographs, and any other related articles.

However, the Service is concerned about the potential impacts the proposed action might have on aquatic species. Aquatic resources are highly susceptible to sedimentation. Therefore, we recommend that all practicable measures be taken to avoid adverse impacts to aquatic species, including implementing directional boring methods and stringent sediment and erosion control measures. An erosion and sedimentation control plan should be submitted to and approved by the North Carolina Division of Land Resources, Land Quality Section prior to construction. Erosion and sedimentation controls should be installed and maintained between the construction site and any nearby down-gradient surface waters. In addition, we recommend maintaining natural, vegetated buffers on all streams and creeks adjacent to the project site.

The North Carolina Wildlife Resources Commission has developed a Guidance Memorandum (a copy can be found on our website at (http://www.fws.gov/raleigh) to address and mitigate secondary and cumulative impacts to aquatic and terrestrial wildlife resources and water quality. We recommend that you consider this document in the development of your projects and in completing an initiation package for consultation (if necessary).

We hope you find our web page useful and informative and that following the process described above will reduce the time required, and eliminate the need, for general correspondence for species' lists. If you have any questions or comments, please contact this office at (919) 856-4520.

Sincerely,

Pete Benjamin
Field Supervisor

List of Counties in the Service's Raleigh Field Office Area of Responsibility

Alamance
Beaufort
Bertie
Bladen
Brunswick
Camden
Carteret
Caswell
Chatham
Chowan
Columbus
Craven
Cumberland
Currituck
Dare
Duplin
Durham
Edgecombe
Franklin
Gates
Granville
Greene
Guilford
Halifax
Harnett
Hertford
Hoke
Hyde
Johnston
Jones
Lee
Lenoir
Martin
Montgomery
Moore
Nash
New Hanover
Northampton
Onslow
Orange
Pamlico
Pasquotank
Pender
Perquimans
Person
Pitt
Randolph
Richmond
Robeson
Rockingham
Sampson
Scotland
Tyrrell
Vance
Wake
Warren
Washington
Wayne
Wilson

NC Division of Coastal Management

Project Name: Remedial Investigation Work Plan for Site ID# NONCD0002799
Address: 2501, 2503, 2505, 2507 and 2509 Wrightsville Avenue
Wilmington, New Hanover County, North Carolina

Please state whether the following are/are not located on the site or adjacent properties:

	Are	Are Not
Areas Identified Under Coastal Protection Legislation	☐	☒
Coastal Barriers or Units of a Coastal Barrier System	☐	☒

Comments/Conditions/Concerns

1/29/09
Date

Holley Snider
(Officials Signature)

Holley Snider
(Officials Name – Print or Type)

Field Representative
(Official's Title)

NC DCM
(Department Name)

NC Wildlife Resource Commission

Project Name: Remedial Investigation Work Plan for Site ID# NONCD0002799
Address: 2501, 2503, 2505, 2507 and 2509 Wrightsville Avenue
Wilmington, New Hanover County, North Carolina

Please state whether the following are located on the site or adjacent properties:

	Are	Are Not
National or State Wildlife Refuges	☐	☒
Migratory Pathways and Feeding Areas Critical for Maintenance of Anadromous Fish Species within River Reaches or Areas in Lake or Coastal Tidal Water in which such Fish Spend Extended Periods of Time	☐	☒
Spawning Areas Critical for the Maintenance of Fish/Shellfish Species within River, Lake or Coastal Tidal Waters	☐	☒

Comments/Conditions/Concerns The NCWRC does not foresee any adverse impacts to the wildlife and fisheries in the project area.

04 February 2009 [signature]
Date (Officials Signature)

Molly Ellwood
(Officials Name – Print or Type)

SE Permit Coordinator
(Official's Title)

NC Wildlife Resources Commission.
(Department Name)

22-
13842A

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P. O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890

IN REPLY REFER TO

February 2, 2009

Office of Counsel

SUBJECT: Freedom of Information Act Request No. 09-19

Ms. Amy Conchas
ECS Carolina, LLP
7211 Ogden Business Park
Suite 201
Wilmington, North Carolina 28411

Dear Ms. Conchas:

This is in response to your January 6, 2009 electronic request for information related to property at 2501, 2503, 2505, and 2509 Wrightsville Avenue in Wilmington, North Carolina. You provided the names of the property owner/manager to assist us in our search.

We have searched our regulatory database using the information you provided and did not find any information that appeared to be related to the referenced property. We do have files that pertain to property in the same vicinity; but based on your map, I don't believe they are responsive to your request. If you want to pursue this any further, or would like to provide additional information please let us know.

Because we are unable to locate any documents responsive to your request, the decision in Oglesby v. Department of the Army, 920 F.2d 57 (D.C. Cir. 1990) requires that we notify you of the available appeal rights pursuant to 5 U.S.C. 552(a)(6)(A)(i).

Should you consider this response to be a denial of your request, you may appeal this determination to the Army General Counsel, Washington, DC. However, the appeal letter should bear the notation "Freedom of Information Act Appeal" and should be addressed to me, M. Brooke Lamson, District Counsel, US Army Engineer District, Wilmington, NC 28402-1890, and must be received within 60 days of the date of this letter.

Sincerely,

M. Brooke Lamson

M. Brooke Lamson
District Counsel

APPENDIX E – ENVIRONMENTAL CONSERVATION LABORATORIES INC. LIST

STATE OF NORTH CAROLINA DEPARTMENT OF THE
ENVIRONMENT AND NATURAL RESOURCES

DIVISION OF WATER QUALITY
LABORATORY CERTIFICATION PROGRAM

In accordance with the provisions of N.C.G.S. 143-215.3 (a) (1), 143-215.3 (a)(10) and NCAC 2H.0800:

ENVIRONMENTAL CONSERVATION LABORATORIES, INC.

Is hereby certified to perform environmental analysis as listed on Attachment I and report monitoring data to DWQ for compliance with NPDES effluent, surface water, groundwater, and pretreatment regulations.

By reference 15A NCAC 2H .0800 is made a part of this certificate.

This certificate does not guarantee validity of data generated, but indicates the methodology, equipment, quality control procedures, records, and proficiency of the laboratory have been examined and found to be acceptable.

This certificate shall be valid until December 31, 2009

Certificate No. : 591

Pat Donnelly

Pat Donnelly

Attachment

North Carolina Wastewater/Groundwater Laboratory Certification

Certified Parameters Listing

Lab Name:	Environmental Conservation Laboratories, Inc.	Certificate Number:	591
Address:	102 Woodwinds Industrial Ct. Ste. A Cary, NC 27511-6204	Effective Date:	01/01/2009
		Expiration Date:	12/31/2009
		Date of Last Amendment:	01/14/2009

The above named laboratory, having duly met the requirements of 15A NCAC 2H.0800, is hereby certified for the measurement of the parameters listed below.

CERTIFIED PARAMETERS

INORGANICS

ALKALINITY
- Std Method 2320B
- EPA Method 310.2

BOD
- Std Method 5210B

COD
- Std Method 5220D
- EPA Method 410.4

CHLORIDE
- Std Method 4500 Cl E
- EPA Method 300
- SW846 Method 9056
- SW846 Method 9056A

COLIFORM FECAL
- Std Method 9222D (MF)

COLIFORM TOTAL
- Std Method 9222B (MF)

COLOR PC
- Std Method 2120B (PtCo)

CONDUCTIVITY
- Std Method 2510B
- EPA Method 120.1

CYANIDE TOTAL
- Std Method 4500 CN E
- EPA Method 335.4
- SW846 Method 9014

DISSOLVED OXYGEN
- Std Method 4500 O G

FLUORIDE
- Std Method 4500 F C
- EPA Method 340.2
- EPA Method 300
- SW846 Method 9056
- SW846 Method 9056A

MBAS
- Std Method 5540C

AMMONIA NITROGEN
- Std Method 4500 NH3 F
- EPA Method 350.1

TOTAL KJELDAHL NITROGEN
- EPA Method 351.2

NO2 + NO3 NITROGEN
- Std Method 4500 NO3 E
- Std Method 4500 NO3 F
- EPA Method 353.2
- SW846 Method 9056A

NITRATE NITROGEN
- EPA Method 353.2
- EPA Method 300
- SW846 Method 9056
- SW846 Method 9056A

NITRITE NITROGEN
- Std Method 4500 NO2 B
- EPA Method 354.1
- EPA Method 300
- SW846 Method 9056
- SW846 Method 9056A
- EPA Method 353.2

TOTAL PHOSPHORUS
- EPA Method 365.4

pH
- Std Method 4500 H B
- SW846 Method 9040C
- SW846 Method 9045D

RESIDUE SETTLEABLE
- Std Method 2540F

RESIDUE TOTAL
- Std Method 2540B

RESIDUE DISSOLVED 180 C
- Std Method 2540C

RESIDUE SUSPENDED
- Std Method 2540D

SULFATE
- EPA Method 300
- SW846 Method 9056
- SW846 Method 9056A

SULFIDE
- Std Method 4500 S D
- Std Method 4500 S E
- EPA Method 9034
- Hach Method 8131

TEMPERATURE
- Std Method 2550B

TURBIDITY
- Std Method 2130B
- EPA Method 180.1

TCLP METALS
- SW846 Method 1311

TCLP
- SW846 Method 1311

SPLP
- SW846 Method 1312

VOLATILE RESIDUE
- EPA Method 160.4

METALS

ALUMINUM
- EPA Method 200.7
- EPA Method 200.8
- SW846 Method 6010B
- SW846 Method 6010C
- SW846 Method 6020
- SW846 Method 6020A

ANTIMONY
- EPA Method 200.7
- EPA Method 200.8
- SW846 Method 6010B
- SW846 Method 6010C
- SW846 Method 6020
- SW846 Method 6020A

ARSENIC
- EPA Method 200.7
- EPA Method 200.8
- SW846 Method 6010B
- SW846 Method 6010C
- SW846 Method 6020
- SW846 Method 6020A

BARIUM
- EPA Method 200.7
- EPA Method 200.8
- SW846 Method 6010B
- SW846 Method 6010C
- SW846 Method 6020
- SW846 Method 6020A

BERYLLIUM
- EPA Method 200.7
- EPA Method 200.8
- SW846 Method 6010B
- SW846 Method 6010C
- SW846 Method 6020
- SW846 Method 6020A

CADMIUM
- EPA Method 200.7
- EPA Method 200.8
- SW846 Method 6010B
- SW846 Method 6010C
- SW846 Method 6020
- SW846 Method 6020A

CALCIUM
- EPA Method 200.7
- EPA Method 200.8
- SW846 Method 6010B
- SW846 Method 6010C
- SW846 Method 6020
- SW846 Method 6020A

CHROMIUM TOTAL
- EPA Method 200.7
- EPA Method 200.8
- SW846 Method 6010B
- SW846 Method 6010C
- SW846 Method 6020
- SW846 Method 6020A

COBALT

This certification requires maintance of an acceptable quality assurance program, use of approved methodology, and satisfactory performance on evaluation samples. Laborato subject to civil penalties and/or decertification for infractions as set forth in 15A NCAC 2H.0807.

Attachment

North Carolina Wastewater/Groundwater Laboratory Certification

Certified Parameters Listing

Lab Name:	Environmental Conservation Laboratories, Inc.	Certificate Number:	591
Address:	102 Woodwinds Industrial Ct. Ste. A Cary, NC 27511-6204	Effective Date:	01/01/2009
		Expiration Date:	12/31/2009
		Date of Last Amendment:	01/14/2009

The above named laboratory, having duly met the requirements of 15A NCAC 2H.0800, is hereby certified for the measurement of the parameters listed below.

CERTIFIED PARAMETERS

EPA Method 200.7
EPA Method 200.8
SW846 Method 6010B
SW846 Method 6010C
SW846 Method 6020
SW846 Method 6020A

COPPER
EPA Method 200.7
EPA Method 200.8
SW846 Method 6010B
SW846 Method 6010C
SW846 Method 6020
SW846 Method 6020A

IRON
EPA Method 200.7
SW846 Method 6010B
SW846 Method 6010C
SW846 Method 6020
SW846 Method 6020A
EPA Method 200.8

LEAD
EPA Method 200.7
EPA Method 200.8
SW846 Method 6010B
SW846 Method 6010C
SW846 Method 6020
SW846 Method 6020A

MAGNESIUM
EPA Method 200.7
EPA Method 200.8
SW846 Method 6010B
SW846 Method 6010C
SW846 Method 6020
SW846 Method 6020A

MANGANESE
EPA Method 200.7
EPA Method 200.8
SW846 Method 6010B
SW846 Method 6010C
SW846 Method 6020
SW846 Method 6020A

MERCURY
EPA Method 245.1
SW846 Method 7470A
SW846 Method 7471A
SW846 Method 7471B
EPA Method 245.5

MOLYBDENUM
EPA Method 200.7
EPA Method 200.8
SW846 Method 6010B
SW846 Method 6010C
SW846 Method 6020
SW846 Method 6020A

NICKEL
EPA Method 200.7
EPA Method 200.8
SW846 Method 6010B
SW846 Method 6010C
SW846 Method 6020
SW846 Method 6020A

SELENIUM
EPA Method 200.7
EPA Method 200.8
SW846 Method 6010B
SW846 Method 6010C
SW846 Method 6020
SW846 Method 6020A

SILVER
EPA Method 200.7
EPA Method 200.8
SW846 Method 6010B
SW846 Method 6010C
SW846 Method 6020
SW846 Method 6020A

THALLIUM
EPA Method 200.7
EPA Method 200.8
SW846 Method 6010B
SW846 Method 6010C
SW846 Method 6020
SW846 Method 6020A

TIN
EPA Method 200.7
SW846 Method 6010B

VANADIUM
EPA Method 200.7
EPA Method 200.8
SW846 Method 6010B
SW846 Method 6010C
SW846 Method 6020
SW846 Method 6020A

ZINC
EPA Method 200.7
EPA Method 200.8
SW846 Method 6010B
SW846 Method 6010C
SW846 Method 6020
SW846 Method 6020A

BORON
EPA Method 200.7
SW846 Method 6010B
SW846 Method 6010C
SW846 Method 6020
SW846 Method 6020A

POTASSIUM
EPA Method 200.7
SW846 Method 6010B
SW846 Method 6010C
EPA Method 200.8
SW846 Method 6020
SW846 Method 6020A

SODIUM
EPA Method 200.7
SW846 Method 6010B
SW846 Method 6010C
EPA Method 200.8
SW846 Method 6020
SW846 Method 6020A

STRONTIUM
SW846 Method 6010C

TITANIUM
SW846 Method 6010C

ORGANICS

ORGANOCHLORINE PESTICIDES & PCBs
EPA Method 608

ORGANOCHLORINE PESTICIDES
SW846 Method 8081A

POLYCHLORINATED BIPHENYLS (PCB'S)
EPA SW846 Method 8082

PURGEABLE ORGANICS
EPA Method 624
SW846 Method 8260B/5030B
SW846 Method 8260B/5035

BASE NEUTRAL/ACID ORGANICS
EPA Method 625
SW846 Method 8270C

TPH DIESEL RANGE ORGANICS
California Method
SW846 Method 8015B

TPH GASOLINE RANGE ORGANICS
California Method
SW846 Method 8015B

1,2, DIBROMOETHANE (EDB)
EPA Method 504.1 (Includes DBCP & TCP)
SW846 Method 8011 (Includes DBCP)

EXTRACTABLE PETROLEUM HYDROCARBONS
Massachusetts Method

VOLATILE PETROLEUM HYDROCARBONS
Massachusetts Method

This certification requires maintance of an acceptable quality assurance program, use of approved methodology, and satisfactory performance on evaluation samples. Laborato
subject to civil penalties and/or decertification for infractions as set forth in 15A NCAC 2H.0807.

Proposed Laboratory Team

Department	Member/Role	Degree(s)	Years Lab Experience
Admin	Stephanie Franz/Project Manager	BS- Chemistry	13
Admin	Rachel Anderson/QA Manager	BA-Chemistry	20
Admin	Rich Detar/Lab Manager	BS-Chemistry	17
Organics	Ron Fertile/Organics Manager	BA-Microbiology	11
Organics	Justin Guenzler/Analyst	BS-Chemistry	7
Organics	David Morse/Analyst	AAS-Environmental Sci.	22
Organics	Nkem Ukpabi/Prep Analyst	BS-Biology	8
Organics	Belinda Royall/Prep Analyst	N/A	14
Metals	John Halpin/Metals Manager	BS-Environmental Sci.	12
Metals	Valerie Obremski/Analyst	BS-Biology	17
Metals	Nicole Humphreys/Analyst	BS-Environmental Eng.	2

APPENDIX F – HEALTH AND SAFETY PLAN

ECS Site-Specific Health, Safety and Accident Prevention Plan

GENERAL INFORMATION

Client/Site Name:	Stephen Pike with Investors Trust Company / Wrightsville Avenue REC Site
Site Address:	2501, 2503, 2505, 2507 and 2509 Wrightsville Avenue Wilmington, New Hanover County, North Carolina
Job/Project #:	22-13842 B
Estimated Start Date:	March 2009
Estimated Completion Date:	May 2009

EMERGENCY INFORMATION

Phone Numbers:	Hospital #:	(910)343-7000	Ambulance #:	911
	Fire #:	911	Police #:	911
Hospital Name & Address:	New Hanover Regional Medical Center 2131 S. 17th Street, Wilmington, North Carolina			
Directions and Street Map of Route to Nearest Hospital Attached: ☒ Yes ☐ No (if no, do not proceed)				
Other Emergency Contact:	Kris Stamm (ECS – Wilm. Safety Officer)		Phone #:	(910) 520-9692
Location of Nearest Phone:	Adjacent properties			

Have Necessary Underground Utility Notifications for Subsurface Work Been Made? ☒ Yes ☐ Not Applicable

Specify Clearance Date & Time, Dig Safe Clearance I.D. #, And Other Relevant Information:

Multiple dates, depends on specific work. Utility Clearance Forms are attached

SCOPE OF WORK

Site Description:	Vacant lot previously occupied by a multi-tenant commercial building and duplex. Prior to that, the property was occupied by a general store and residential buildings.
Specific Tasks Performed by ECS:	ECS will install soil borings using a geoprobe to collect soil samples and install groundwater monitoring wells to perform the site assessment
Concurrent Tasks to be Performed by ECS Subcontractors (List Subcontractors by Name):	Subsurface Environmental Investigation (SEI)
Concurrent Tasks to be Performed by Others:	None a this time

Does this project include confined space entry? ☐ yes ☒ no

ROLES AND RESPONSIBILITIES:

ECS On-Site Personnel

Name	Project Title/Assigned Role	Telephone Numbers
Amy Conchas	Project Scientist/Site Supervisor	work: (910) 686-9114 home: (910) 794-2919
Amy Conchas	Project Scientist/Site Safety Officer/Competent Person	work: (910) 686-9114 home: (910) 794-2919
Lee Ann Jones	Other: Staff Scientist	work: (910) 686-9114 home: (910) 673-9915

Site Supervisors and Project Managers (SS/PM): Responsibility for compliance with ECS Health and Safety programs, policies, procedures and applicable laws and regulations is shared by all ECS management and supervisory personnel. This includes the need for effective oversight and supervision of project staff necessary to control the Health and Safety aspects of ECS on-site activities.

Site Safety Officers and Competent Persons (SSO/CP): The Site Safety Officer (SSO) or "Competent Person", as defined by OSHA 1926.20(b) - Accident Prevention Responsibilities, is the individual "who is capable of identifying existing and predictable hazards in surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them." The SSO is designated on a site-by-site basis based on the site conditions, scope-of-work, and the individual's ability to recognize site-specific hazards and take appropriate corrective actions. This individual is responsible to both project management and the designated HSC with regard to the completion of these assigned duties.

Staff: Ultimate control of Health and Safety is in the hands of each individual employee. Therefore, each employee must become familiar with and comply with all Health and Safety requirements associated with their position and daily operations. Employees also have the responsibility to notify the appropriate management, SSO and HSC of unsafe conditions and accidents/injuries immediately. When employees are issued respirators or any other personal protective equipment (PPE), they are responsible for ensuring that said items are used properly, cleaned as required and maintained in good working order.

(Sub)contractors: (Sub)contractors must develop their own accident prevention plan related to their specific on-site activities. Subcontractors may use ECS's plan as an informational model. However, each Subcontractor is responsible for determining the plan's adequacy and applicability to its own activities on site. Subcontractors must deliver their plan in clear written form to ECS prior to the initiation of on-site activities.

OTHER PROJECT PERSONNEL:

Name	Project Title/Assigned Role	Telephone Numbers
Stephen Gosselin	Associate/Principal-in-Charge	Work: (704) 525-5152 Home:
Amy Conchas	Project Manager	work: (910) 686-9114 home: (910) 794-2919
Kris Stamm	Health and Safety Coordinator (HSC)	Work: (910) 686-9114 Home: (910) 973-1395

PLAN ACKNOWLEDGMENT AND APPROVALS

Approval or Acknowledgment	SSO/CP	SS/PM	AIC/PIC	HSC
Probable hazards identified on form.		X		X
Project scope accurately reflected on form.		X	X	
Appropriate emergency response information identified on form.		X		X
Appropriate control measures identified on form.		X		X
Hazards and control measures to be implemented on site acknowledged.	X	X	X	
Overall project scope and health and safety requirements acknowledged.	X	X	X	

DOCUMENTATION TO BE COMPLETED ON SITE

- A **Site Inspection Log** (page 11) must be completed at the initiation of on-site activities and at least once per week thereafter until the completion of ECS on-site activities.
- A **Site Health and Safety Briefing/ Site Orientation Record** (page 12) must be completed at the initiation of on-site activities and at least once per week thereafter until the completion of ECS on-site activities. (Note: The actual briefing may be conducted off site, in the office for example, if conditions preclude or render impractical its completion on site.)
- The **Subcontractor's Statement of Understanding Regarding Health and Safety Responsibilities** (page 13) and the **ECS Incident Report and/or Discovery of a Potential Hazard** (page 14) are to be completed on an as needed basis.

EQUIPMENT AND CONTROLS

Monitoring Equipment [1]	Personal Protective Equipment
☐ PID Type: Lamp Energy: eV ☒ FID Type: ☐ Cal gas and equipment type: ☐ LEL/O_2 Meter ☐ Others: **Other Equipment & Gear [2]** ☒ 10# ABC Fire Extinguisher when gasoline powered equipment is present ☐ Caution Tape ☐ Traffic Cones or Stanchions ☐ Warning Signs or Placards ☒ Decon Buckets, Brushes, Detergent, Towels and Plastic Bags ☐ Others:	☐ Respirator Type: ☐ Resp-Cartridge Type: ☒ Hearing Protection ☒ Hardhat ☐ Outer Gloves Type: ☐ Inner Gloves Type: ☒ Steel-toed boots/shoes ☐ Coveralls Type: ☐ Outer Boots Type: ☒ Eye Protection with side shields ☐ Traffic Vest ☐ Personal Flotation Device (PFD) Others:

1. All direct reading instruments must be referenced on site at least twice/day (pre- and postsampling) using a cal-gas reference standard and in accordance with the manufacturer's instructions. Monitoring using direct reading instruments should be continuous while there is disturbance of material (e.g. soil).

2. A 15- to 25-foot exclusion zone is required wherever necessary to control access to heavy equipment and/or hazardous exposure situations.

AIR MONITORING INSTRUMENTS AND ACTION LEVELS:

Anticipated Chemical Hazards: PAHS

Organic Vapor Detector H-Nu, OVM, OVA (if required) - Breathing Zone Readings (will be completed by HSC):

_____ to _____ units	Remain in Level D. Use colorimetric tubes or other chemical specific device to verify low PEL contaminant levels do not contain another similar toxic materials (Benzene, Vinyl Chloride, etc.) where applicable. Cease work and consult with DHSC if levels of benzene or vinyl chloride exceed 1/2 ppm on a sustained basis.
_____to_____ units	Withdraw from work area and contact Project Management. Proceed to Level C protection for re-entry, or discontinue operation
>_____ units	Secure operations, withdraw from work area, and discontinue work at that location until contaminants can be evaluated, and detailed (SSHP) plan implemented.

Combustible Gas Indicator CGI/LEL Meter (if required) - Readings Near Vapor Source:

• < 10% LEL:	Continue to monitor with caution. Eliminate all ignition sources.
• 10% to 20% LEL:	Stop operations until appropriate vapor control measures (i e. foam, sand, polyethylene, film, portable blower etc.) and resample before resuming activity.
• > 20% LEL:	Stop operations and withdraw from area. Contact DHSC before proceeding.

HAZARD ASSESSMENT

Enter **X** *(applies, or required item(s) available) or* **leave blank** *(not applicable)*

HAZARD ASSESSMENT: PHYSICAL HAZARDS AND RELATED CONCERNS

☐ **Confined Space Entry (CSE)**. Confined space entry means the *potentially hazardous* entry into any space which, by design, has limited openings for entry and exit, unfavorable natural ventilation which could contain or produce dangerous air contaminants, and which is not intended for continuous employee occupancy. Confined spaces include but are not limited to storage tanks, compartments of ships, process vessels, pits, silos, vats, degreasers, reaction vessels, boilers, ventilation and exhaust ducts, sewers, tunnels, underground utility vaults, and pipelines. Other environments which must be treated as confined spaces include *test pits, and basements, garages, warehouses and other indoor areas where mechanical (i.e., diesel, propane, gasoline or similarly powered) equipment must be operated for drilling or test pitting purposes*. Confined space entry should be allowed only when absolutely necessary, and then only when all requirements of ECS's Confined Space Entry Control Program, and/or CSE Program Supplement for Indoor Drilling (and Similar Operations) and/or Trench and Excavation Safety and Health Guide (and CSE Program Supplement), contained in the Health and Safety Program Manual, have been satisfied.

☒ **Construction Hazards, Drill Rigs, Backhoes, etc.** The use of drill rigs, backhoes and other heavy equipment represent potentially serious construction hazards. Whenever such equipment is used, personnel in the vicinity should be limited to those who must be there to complete their assigned duties. All personnel must avoid standing within the turning radius of the equipment or below any suspended load. Job sites must be kept as clean, orderly and sanitary as possible. When water is used, care must be taken to avoid creating muddy or slippery conditions. If slippery conditions are unavoidable, barriers and warning signs must be used to warn of these dangers.

Never turn your back to operating machinery. Never wear loose clothing, jewelry, hair or other personal items around rotating equipment or other equipment that could may catch or ensnare loose clothing, jewelry, hair or other personal items. Always stand far enough away from operating machinery to prevent accident contact which may result from mechanical or human error.

Additionally, the following basic personal protective measures must be observed: **Hardhats** must be worn to protect against bumps or falling objects. **Safety glasses** must be worn by all workers in the vicinity of drill rigs or other sources of flying objects. Goggles, face shields or other forms of eye protection must be worn when necessary to protect against chemicals or other hazards. **Steel-toed safety shoes or boots** are also required. The shoes must be chemically resistant or protected with appropriately selected boots/coverings where necessary. Unless otherwise specified, normal **workclothes** must be worn. Long sleeves and gloves are also required whenever necessary to protect against hazardous contact, cuts, abrasions or other possible skin hazards.

☐ **Electrical**. OSHA regulations require that employees who may be exposed to electrical equipment be trained to recognize the associated hazards and the appropriate control methods. All **extension cords** used for portable tools or other equipment must be designed for hard or extra usage and be (three-wire) grounded. All 120-volt, single-phase 15- and 20-ampere receptacle outlets on construction sites, and other locations where moisture/water contact may occur, must be equipped with **ground-fault circuit interrupters (GFCI)** units. GFCI units must be attached directly to or as close as possible to the receptacle. GFCI located away from the receptacle will not protect any wiring between the receptacle and the GFCI unit. Only the wiring plugged into the GFCI and outward will be protected by the GFCI. All **(temporary lighting)** lamps for general illumination must be protected from accidental breakage. Metal case sockets must be grounded. Portable lighting in wet or conductive locations should be 12 volts or less.

☐ **Drums and Buried Drums**. As a precautionary measure, personnel must assume that *labeled* and *unlabeled drums* encountered during field activities contain hazardous materials until their contents can be confirmed and characterized. Personnel should recognize that drums are frequently mislabeled, particularly drums that are reused.

Only trained and authorized personnel should be allowed to perform drum handling. Prior to any handling, drums must be visually inspected to gain as much information as possible about their contents. Trained field personnel must look for signs of deterioration such as corrosion, rust or leaks, and for signs that the drum is under pressure such as swelling or bulging. Drum-type and drumhead configuration may provide the observer with information about the type of material inside, (i.e., a removable lid is designed to contain solids, while the presence of a bung indicates liquid storage).

Although not usually anticipated, buried drums can be encountered when digging test pits. Therefore, the following provisions must be observed if drums are encountered. Machine excavation (i.e., backhoe) should cease immediately anytime a drum is encountered. The appropriate management personnel should be notified immediately. All ECS personnel should be instructed to immediately leave the work area.

Even authorized personnel must not enter an excavation where drums have been uncovered, even for monitoring purposes, unless all provisions of OSHA's trenching and excavation standard have been met and the appropriate level of personal protective equipment (PPE) is utilized. Sampling of unknown drums usually requires Level B protection. Buried drums must not be moved unless it can be accomplished in a safe manner and overpack drums are available.

☒ **Fire and Explosion.** The possibility of flammable materials being encountered during field activities must be recognized and the appropriate steps necessary to minimize fire and explosion must be observed. This includes situations where *excessive organic vapors, free product or methane* are, or may be, encountered. When this occurs, monitoring with a combustible gas indicator (CGI), is required.

In situations where hexane, methanol are needed for field activities, the following precautions must be observed: keep flammable and combustible materials away from heat, sparks and open flames; do not smoke around flammable or combustible materials; provide an ABC rated fire extinguisher appropriate for the materials present, and keep all flammable and combustible liquids in approved and properly labeled safety containers.

☐ **Landfill/Methane Hazards.** Fire and explosion should be regarded as one of, if not the, most significant potential hazards associated with drilling operations and other intrusive work conducted at a landfill. Accordingly, all sources of ignition must be fully controlled. Failure to control ignition sources could result in fire, explosion and pose a serious threat to life and health. Control methods may include forced ventilation and/or filling the borehole with enough water to inhibit the release of methane and other gases which would otherwise escape through the top of the borehole.

If forced (mechanical) ventilation is to be used, all such equipment must be approved for Class I, Division I hazardous atmospheres. The blower must be positioned to blow across the top of the borehole so that gases and vapors may be diluted as they exit the borehole. Do not attempt to suck out the gases or vapors. Blowers, all other mechanical equipment, and tools which could release sparks or static electricity must be bonded and grounded.

Regardless of the gas/vapor control method used, the atmosphere surrounding the borehole must be frequently monitored using direct reading instruments approved for Class I, Division I hazardous atmospheres. Monitoring should be conducted within 1 to 2 feet of the top of the borehole. Do not insert sampling devices into the borehole. The use of tubing connected to a remote instrument is recommended. Never approach the auger or drill shaft while it is in operation. Always notify the operator when about to take a reading.

Regardless of actual instrument readings, if all sources of ignition can not be controlled, operations should be immediately shut down if readings equal or exceed 10% of LEL and the area evacuated until ignition sources have been eliminated. Ignition sources include, but are not limited to: smoking, static electricity, lighting, open flames, spontaneously ignitable substances, frictional heat or sparks, hot surfaces, radiant heat, electrical sparks, stray currents, cutting and welding, and ovens, furnaces and heating equipment.

☒ **Heat and Cold Stress.** Overexposure to temperature extremes can represent significant risks to personnel if simple precautions are not observed. Typical control measures designed to prevent **heat stress** include dressing properly, drinking plenty of the right fluids, and establishing an appropriate work/break regimen. Typical control measures designed to prevent **cold stress** also include dressing properly, and establishing an appropriate work/break regimen. The project manager must assure that the appropriate provisions of **ECS's Heat and Cold Stress Control Program** contained in the Health and Safety Program Manual are observed.

☐ **Moving Vehicles, Traffic Safety.** All vehicular traffic routes which could impact worker safety must be identified and communicated. Whenever necessary, barriers or other methods must be established to prevent injury from moving vehicles. Traffic vests must be worn by personnel working near moving vehicular traffic. This is particularly important when field activities are conducted in parking lots, driveways, ramps or roadways. OSHA 1926.201 specifies that when signs, signals or barricades do not provide adequate protection from highway or street traffic, flagmen must be utilized. *Flagmen must wear red or orange garments. Garments worn at night must be reflective.*

☒ **Noise.** Noise exposure can be affected by many factors including the number and types of noise sources (continuous vs. intermittent or impact), and the proximity to noise intensifying structures such as walls or buildings which cause noise to bounce back or echo. The single most important factor effecting total noise exposure is distance from the source. The closer one is to the source the louder the noise. The operation of a drill rig, backhoe or other mechanical equipment can be sources of significant noise exposure. In order to reduce the exposure to this noise, personnel working in areas of excessive noise must use hearing protectors (ear plugs or ear muffs) in accordance with the **ECS Hearing Conservation Program** contained in the Health and Safety Program Manual.

Rule-of-Thumb: Wherever actual data from sound level meters or noise dosimeters is unavailable and it is necessary to raise one's voice above a normal conversational level to communicate with others within 3 to 5 feet away, hearing protection should be worn.

☒ **Overhead Utilities and Hazards.** Overhead hazards can include low hanging structures which can cause injury due to bumping into them. Other overhead hazards include *falling objects, suspended loads, swinging loads and rotating equipment.* Hardhats must be worn by personnel in areas were these types of physical hazards may be encountered. Barriers or other methods must also be used to exclude personnel from these areas were appropriate. Electrical wires are another significant overhead hazard. According to OSHA (29 CFR 1926.550), *the minimum clearance which must be maintained from overhead electrical wires is 10 feet* from an electrical source rated $\leq$ 50 kV. Sources rated > 50 kV require a minimum clearance of 10 feet plus 0.4 inch per kV above 50 kV.

☐ **Pedestrian Traffic.** The uncontrolled presence of pedestrians on a drilling or excavation site can be hazardous to both pedestrians and site workers. Prior to the initiation of site activities, the site should be surveyed to determine if, when and where pedestrian may gain access. This includes walkways, parking lots, gates and doorways. Barriers or caution tape should be used to exclude all pedestrian traffic. *Exclusion of pedestrian traffic is intended to prevent injury to the pedestrians and eliminate distractions which could cause injury to ECS personnel or other site workers.*

☐ **Test Pit and/or other Excavations.** All provisions of the OSHA trenching and excavation standard (29 CFR 1926.650-652) and **ECS's Trench and Excavation Safety and Health Guide (and CSE Program Supplement)** contained in the Health and Safety Manual must be followed during excavation activities. This includes *all test pit excavation and sampling activities.* The estimated location of utility installations, such as sewer, telephone, electric, water lines and other underground installations that may reasonably be expected to be encountered during excavation work, must be determined prior to opening an excavation.

Excavations in contaminated or potentially contaminated areas must be tested for confined spaces atmospheric hazards prior to entry. Excavations should not be entered if other means are available to perform the task requiring entry. If entry into an excavation is required, the atmosphere within the space must be monitored by a trained person to assure that oxygen concentrations are at greater than or equal to 19.5 percent, that combustible gas levels are less than 10 percent, and that vapor levels are within applicable safe exposure (PEL and TLV) limits.

A ladder or similar means of egress must be located in excavations greater than 4 feet in depth so as to require no more than 25 feet of lateral travel for employees. *No person should be allowed to enter an excavation in type B or C soil greater than 5 feet in depth unless the walls of the excavation have been protected using an approved shield (trench box), an approved shoring system, or the walls have been sloped back to an angle of 34 degrees, the excavation is free of accumulated water, and the excavation has been tested for hazardous atmospheres* as noted previously. If personnel enter an excavation, the spoils pile and all materials must be placed at least 2 feet from the edge of the excavation to prevent the materials from rolling into the excavation. *Personnel must remain at least 2 feet away from the edge of the excavation at all times.* Upon completion of a test pit exploration, the excavation should be backfilled and graded. Excavation should never be left open unless absolutely necessary, and then only with proper barricading and controls to prevent accidental injury.

☒ **Underground Utilities and Hazards.** The identification of underground storage tanks (USTs), pipes, utilities and other underground hazards is critically important prior to all drilling, excavating and other intrusive activities. In accordance with OSHA 29 CFR 1926.650, *the estimated location of utility installations, such as sewer, telephone, electric, water lines and other underground installations that may reasonably be expected to be encountered* during excavation work, *must be determined* prior to opening an excavation. The same requirements apply to drilling operations and the use of soil-gas probes. Where public utilities may exist, the utility agencies or operators must be contacted directly or through a utility-sponsored service such as *Dig-Safe.* Where other underground hazards may exist, reasonable attempts must be made to identify their locations as well. *Failure to identify underground hazards can lead to fire, explosion, flooding, electrocution or other life threatening accidents.*

☐ **Water Hazards and Boat Sampling.** The collection of water or sediment samples on or immediately adjacent to a body of water can pose significant hazards. In addition to the slip, trip and fall hazards associated with wet surfaces, the potential for drowning accidents must be recognized. These hazards can be intensified by the use of some personnel protective equipment (PPE), particularly if respiratory protection is worn. OSHA 29 CFR 1926.106 requires that all employees working over or near water, where the danger of drowning exists, *must wear a U.S. Coast Guard-approved life jacket or buoyant work vest.* Ring buoys and emergency *standby personnel* must also be in place.

HAZARD ASSESSMENT: CHEMICAL HAZARDS AND RELATED CONCERNS

☒ **Chemicals Subject to OSHA Hazard Communication.** All chemicals used in field activities such as solvents, reagents, decontamination solutions, or any other hazardous chemical must be listed and accompanied by the required labels, Material Safety Data Sheets (MSDS), and employee training documentation (OSHA 1910.1200). For additional information refer to **ECS's Hazard Communication Program** contained in the Health and Safety Program manual.

☐ **Asbestos.** Disturbance of building materials in buildings built prior to 1980 must be evaluated for the presence of asbestos-containing materials by an accredited ECS inspector. The inspection and/or removal of asbestos-based or asbestos-containing building materials is regulated by some major cities and several states. Regulations require individuals who conduct building inspections for the presence of asbestos or collect samples of asbestos containing materials to be licensed or certified. ECS employees must determine the applicability of these regulations prior to any activities involving asbestos. The primary health effects of asbestos exposure include asbestosis (a scarring of the lungs), lung cancer, mesothelioma and other forms of cancer. Exposure to asbestos is regulated by a comprehensive OSHA standard (29 CFR 1910.1001).

☐ **BTEX Compounds.** Exposure to the vapors of **benzene, ethyl benzene, toluene** and **xylenes** above their respective permissible exposure limits (PELs), as defined by the Occupational Safety and Health Administration (OSHA), may produce irritation of the mucous membranes of the upper respiratory tract, nose and mouth. Overexposure may also result in the depression of the central nervous system. Symptoms of such exposure include drowsiness, headache, fatigue and drunken-like behavior. Benzene has been determined to be carcinogenic, targeting blood-forming organs and bone marrow. The odor threshold for benzene is higher than the PEL and employees may be overexposed to benzene without sensing its presence, therefore, detector tubes must be utilized to evaluate airborne concentrations.

The vapor pressures of these compounds are high enough to generate significant quantities of airborne vapor. On sites where high concentrations of these compounds are present, a potential inhalation hazard to the field team during subsurface investigations can result. However, if the site is open and the anticipated quantities of BTEX contamination are small (i.e., part per million concentrations in the soil or groundwater), overexposure potential will also be small.

☐ **Carbon Monoxide.** Carbon monoxide (CO) is a gas usually formed by the incomplete combustion of various fuels. Welding, cutting and the operation internal combustion engines can produce significant quantities of CO. Amounts of CO can quickly rise to hazardous levels in poorly ventilated areas. CO is odorless and colorless. It cannot be detected without appropriate monitoring equipment. LEL/O_2 meters and H-Nu/photoionizing detectors are not appropriate for the detection of CO. A direct reading instrument, calibrated for CO, should be used. Common symptoms of overexposure include pounding of the heart, a dull headache, flashes before the eyes, dizziness, ringing in the ears and nausea. These symptoms must not be relied upon in place of an appropriately calibrated monitoring instrument. Exposures should not exceed 15 ppm. Exposures above 15 ppm require the use of supplied air respirators. Air purifying respirators are not approved for protection against CO.

☐ **Chlorinated Organic Compounds.** Exposure to the vapors of many chlorinated organic compounds such as vinyl chloride, tetrachloroethylene, 1,1,1-trichloroethane, trichloroethylene and 1,2-dichloroethylene above their respective permissible exposure limits (PELs) will result in similar symptoms. The actual PELs as set by the Occupational Safety and Health Administration (OSHA) vary depending on the specific compound. Overexposure to the vapor of these compounds can cause irritation of the eyes, nose and throat. The liquid if splashed in the eyes, may cause burning irritation and damage. Repeated or prolonged skin contact with the liquid may cause dermatitis. Acute overexposure to chlorinated hydrocarbons depresses the central nervous system exhibiting such symptoms as drowsiness, dizziness, headache, blurred vision, uncoordination, mental confusion, flushed skin, tremors, nausea, vomiting, fatigue and cardiac arrhythmia. Alcohol may make symptoms of overexposure worse. If alcohol has been consumed, the overexposed worker may become flushed. Some of these compounds are considered to be potential human carcinogens. Exposure to *vinyl chloride* is regulated by a comprehensive OSHA standard (29 CFR 1910.1017).

☐ **Chromium Compounds.** Hexavalent chromium compounds, upon contact with the skin can cause ulceration and possibly an allergic reaction. Inhalation of hexavalent chromium dusts is irritating and corrosive to the mucous membranes of the upper respiratory tract. Chrome ulcers and chrome dermatitis are common occupational health effects from prolonged and repeated exposure to hexavalent chromium compounds. Acute exposures to hexavalent chromium dusts may cause coughing or wheezing, pain on deep inspiration, tearing, inflammation of the conjunctiva, nasal itch and soreness or ulceration of the nasal septum. Certain forms of hexavalent chromium have been found to cause increased respiratory cancer among workers.

Trivalent chromium compounds (chromic oxide) are generally considered to be of lower toxicity, although dermatitis may occur as a result of direct handling.

☐ **Fuel Oil.** See Petroleum Hydrocarbons (PHC)

☐ **Gasoline.** See BTEX Compounds, and Tetraethyl and Tetramethyl Lead.

☐ **Herbicides.** Some of the commonly used herbicides present a low toxicity to man. However, other herbicides pose more serious problems. Organophosphorus and carbamate herbicides, if inhaled or ingested can interfere with the functioning of the central nervous system. Many herbicides can be readily absorbed through the skin to cause systemic effects. In addition to being absorbed through the skin, many herbicides, upon contact with the skin, may cause discoloring, skin irritation or dermatitis. Contaminants of commercial preparations of chlorinated phenoxy herbicides such as 2,4,5-T include 2,3,7,8-tetrachlorodibenzo-p-dioxin (dioxin). Dioxin is a known mutagen and a suspect carcinogen.

☐ **Hydrogen Sulfide (H_2S).** Hydrogen sulfide, characterized by its "rotten egg" odor, is produced by the decomposition of sulfur-containing organic matter. It is found in many of the same areas where methane is found such as landfills, swamps, sewers and sewer treatment facilities. An important characteristic of H_2S is its ability to cause a decrease in ones ability to detect its presence by smell. So although one may no longer be able to smell it, it could still be present in harmful concentrations.

The symptoms of over exposure include headache, dizziness, staggering and nausea. Severe over exposure can cause respiratory failure, coma, and death. The current OSHA PEL is 10 ppm as an 8-hour TWA. The ACGIH TLV is the same.

☐ **Lead Paint.** The inspection and/or removal, sanding, grinding, etc. of lead-based or lead-containing paints is now strictly regulated by OSHA. States may require individuals who conduct lead paint inspections or collect samples of lead paint to be licensed or certified. ECS employees must determine the applicability of these regulations prior to any activities involving lead paint. For additional health information, see Metal Compounds.

☐ **Metal Compounds.** Overexposure to metal compounds has been associated with a variety of local and systemic health hazards, both acute and chronic in nature, with chronic effects being most significant. Direct contact with the dusts of some metal compounds can result in contact or allergic dermatitis. Repeated contact with arsenic compounds may result in hyperpigmentation. Cases of skin cancer due to the trivalent inorganic arsenic compounds have been documented. The moist mucous membranes, particularly the conjunctivae, are most sensitive to the irritating effects of arsenic. Copper particles embedded in the eye result in a pronounced foreign body reaction with a characteristic discoloration of eye tissue.

Inhalation of copper and zinc dusts and fumes above their established PELs may result in flu-like symptoms known as "metal fume fever." Prolonged and repeated inhalation of the dusts of inorganic arsenic compounds above the established PEL may result in weakness, loss of

appetite, a sense of heaviness in the stomach and vomiting. Respiratory problems such as cough, hoarseness and chest pain usually precede the gastrointestinal problems. Chronic overexposure to the dusts of inorganic arsenic may result in lung cancer.

The early symptoms of lead poisoning are usually nonspecific. Symptoms include sleep disturbances, decreased physical fitness, headache, decreased appetite and abdominal pains. Chronic overexposure may result in severe colic and severe abdominal cramping. The central nervous system (CNS) may also be adversely effected when lead is either inhaled or ingested in large quantities for extended periods of time. The peripheral nerve is usually affected. "Wrist drop" is peculiar to such CNS damage. Lead has also been characterized as a male and female reproductive toxin as well as a fetotoxin. Exposure to lead (Pb) is regulated by a comprehensive OSHA standard (29 CFR 1910.1025).

☐ **Methane**. Methane is an odorless, colorless, tasteless, gas that cannot be detected by an H-Nu or similar photoionizing detector (PID). When present in high concentrations in air, methane acts primarily as a simple asphyxiant without other significant physiologic effects. Simple asphyxiants dilute or displace oxygen below that required to maintain blood levels sufficient for normal tissue respiration.

Methane has a lower explosive limit (LEL) of 5 percent and an upper explosive limit (UEL) of 15 percent. The LEL of a substance is the minimum concentration of gas or vapor in air below which the substance will not burn when exposed to a source of ignition. This concentration is expressed in percent by volume. Below this concentration, the mixture is "too lean" to burn or explode. The UEL of a substance is the maximum concentration of gas or vapor in air above which the substance will not burn when exposed to a source of ignition. Above this concentration, the mixture is "too rich" to burn or explode. The explosive range is the range of concentrations between the LEL and UEL where the gas-air mixture will support combustion. For methane this range is 5 to 15 percent.

☐ **Pesticides**. Pesticides can be grouped into three major categories: organophosphates, carbamate and chlorinated hydrocarbons. The actual permissible exposure limits (PELs) as set by the Occupational Safety and Health Administration (OSHA), vary depending on the specific compound. Organophosphates, including Diazinon, Malathion and Parathion, are quickly absorbed into the body by inhalation, ingestion and direct skin contact. The symptoms of exposure include headache, fatigue, dizziness, blurred vision, sweating, cramps, nausea and vomiting. More severe symptoms can include tightness of the chest, muscle spasms, seizures and unconsciousness. It should also be noted that the Malathion and Parathion PELs both carry the *Skin* notation, indicating that these compounds adversely effect or penetrate the skin. OSHA specifies that skin exposure to substances carrying this designation be prevent or reduced through the use of the appropriate personal protective equipment (PPE).

Chlorinated Hydrocarbons such as Chlordane, DDT and Heptachlor can cause dizziness, nausea, abdominal pain and vomiting. The more severe symptoms include epileptic like seizures, rapid heart beat, coma and death. These compounds also carry the OSHA *Skin* notation. The symptoms of exposure to carbamate such Carbaryl (also known as Sevin) are similar to those described for the organophosphates. However, the OSHA exposure limit for Carbaryl *does not* carry the Skin notation.

☐ **Petroleum Hydrocarbons (PHCs)**. Petroleum Hydrocarbons such as fuel oil are generally considered to be of low toxicity. Recommended airborne exposure limits have not been established for these vapors. However, inhalation of low concentrations of the vapor may cause mucous membrane irritation. Inhalation of high concentrations of the vapor may cause pulmonary edema. Repeated or prolonged direct skin contact with the oil may produce skin irritation as a result of defatting. Protective measures, such as the wearing of chemically resistant gloves, to minimize contact are addressed elsewhere in this plan. Because of the relatively low vapor pressures associated with PHCs, an inhalation hazard in the outdoor environment is not likely.

☐ **Polychlorinated Biphenyls (PCBs)**. Prolonged skin contact with PCBs may cause the formation of comedones, sebaceous cysts, and/or pustules (a condition known as chloracne). PCBs are considered to be suspect carcinogens and may also cause reproductive damage.

The OSHA permissible exposure limits (PELs) for PCBs are as follows:

Compound	*PEL (8-hour time-weighted average)*
Chlorodiphenyl (42% Chlorine)	1 mg/m^3-Skin
Chlorodiphenyl (54% Chlorine)	0.5 mg/m^3 -Skin

It should be noted that PCBs have extremely low vapor pressures (0.001 mm Hg @ 42% Chlorine and 0.00006 mm Hg @ 54% Chlorine). This makes it unlikely that any significant vapor concentration (i.e., exposures above the OSHA PEL) will be created in the ambient environment. This minimizes the potential for any health hazards to arise due to inhalation unless the source is heated or generates an airborne mist. If generated, vapor or mists above the PEL may cause irritation of the eyes, nose, and throat. The exposure limits noted above are considered low enough to prevent systemic effects but it is not known if these levels will prevent local effects. It should also be noted that both PELs carry the *Skin* notation, indicating that these compounds adversely effect or penetrate the skin. OSHA specifies that skin exposure to substances carrying this designation be prevented or reduced through the use of the appropriate personal protective equipment (PPE).

☒ **Polycyclic Aromatic Hydrocarbons (PAHs)**. Due to the relatively low vapor pressure of PAH compounds, vapor hazards at ambient temperatures are not expected to occur. However, if site conditions are dry, the generation of contaminated dusts may pose a potential inhalation hazard. Therefore dust levels should be controlled with wetting if necessary. Repeated contact with certain PAH compounds has been associated with the development of skin cancer. Contact of PAH compounds with the skin may cause photosensitization of the skin, producing skin burns after subsequent exposure to ultraviolet radiation. Protective measures, such as the wearing of chemically resistant gloves, are appropriate when handling PAH contaminated materials.

☐ **Tetraethyl and Tetramethyl Lead.** Both compounds are used as anti-knock ingredients in gasoline. The inhalation of tetraethyl lead dusts may result in irritation of the respiratory tract. This dust, when in contact with moist skin or eye membranes, may cause itching, burning and transient redness.

The direct absorption of a sufficient quantity of tetraethyl lead, whether briefly at a high rate, or for prolonged periods at a low rate, may cause acute intoxication of the central nervous system. Mild degrees of intoxication may cause headache, anxiety, insomnia, nervous excitation and minor gastrointestinal disturbances.

☐ **Volatile Organic Compounds (VOCs).** See BTEX compounds and Chlorinated Organic Compounds.

☐ **Waste Oil.** See Petroleum Hydrocarbons (PHCs) and Cutting Oil.

HAZARD ASSESSMENT: BIOLOGICAL HAZARDS AND RELATED CONCERNS

☒ **Insects.** Insects represent significant sources (vectors) of disease transmission. Therefore, precautions to avoid or minimize potential contact should be considered prior to all field activities. Disease or harmful effects can be transmitted through bites, stings or through direct contact with insects or through ingestion of foods contaminated by certain insects. Examples of disease transmitted by insect bites include encephalitis and malaria from contaminated mosquitoes, lyme disease and spotted fever from contaminated ticks. Stinging insects, such as bees and wasps, are prevalent throughout the country, particularly during the warmer months. The stings of these insects can be painful, and cause serious allergic reactions to some individuals.

☒ **Lyme Disease.** Lyme disease is an infection caused by the bite of certain ticks, primarily deer, dog and wood ticks. The symptoms of Lyme disease usually start out as a skin rash then progress to more serious symptoms. The more serious symptoms can include lesions, headaches, arthritis and permanent damage to the neurological system. If detected early the disease can be treated successfully with antibiotics. The following steps are recommended for prevention of lyme disease and other diseases transmitted by ticks: a) Beware of tall grass, bushes, woods and other areas where ticks may live; b) *Wear good shoes, long pants tucked into socks, a shirt with a snug collar, good cuffs around the wrists and tails tucked into the pants. Insect/tick repellents may also be useful*; c) *Carefully monitor for the presence of ticks. Carefully inspect clothes and skin when undressing. If a tick is attached to the skin it should be removed with fine tipped tweezers. You should be alert for early symptoms over the next month or so. If you suspect that you have been bitten by a tick you should contact a physician for medical advice.*

☐ **Medical Wastes and Bloodborne Diseases.** Any field activity where exposure to medical wastes or other sources of bloodborne pathogens, including first aid, can be reasonably anticipated must be conducted in accordance with the OSHA (29 CFR 1910.1030) *Bloodborne Pathogens* standard. According to the OSHA definition, Bloodborne Pathogens means pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include but are not limited to *hepatitis B virus (HBV) and human immunodeficiency virus (HIV)*. Wherever there is a potential for employee skin, eye, mucous membrane, or parenteral (skin or membrane piercing) contact with blood or other potentially infectious sources, *employees must refer to the ECS Written Exposure Control Plan.*

☐ **Poisonous Plants.** The possible presence of poisonous plants should be anticipated for field activities in wooded or heavily vegetated areas. *Poison ivy* is a climbing plant with alternate green to red leaves (arranged in threes) and white berries. *Poison oak* is similar to poison ivy and *sumac* but its leaves are oak-like in form. The leaves of these poisonous plants produce an irritating oil which causes an intensely itching skin rash and characteristic blister-like lesions. Contact with these plants should be avoided.

☒ **Rats, Snakes and Other Vermin.** Certain animals, particularly those that feed on garbage and other wastes, can represent significant sources (vectors) of disease transmission. Therefore, precautions to avoid or minimize potential contact with (biting) animals (such as rats) or animal waste (such as pigeon droppings) should be considered prior to all field activities. Rats, snakes and other wild animals can inflict painful bites. The bites can poisonous (as in the case of some snakes), or disease causing (as in the case of rabid animals). Avoidance of these animals is the best protection.

☐ **Waste Water and Sewage.** Sewage and waste water contaminated with raw, untreated sewage can represent significant sources of bacterial, viral or fungal contamination. Adverse effects, due to contact, can range from mild skin reactions or rashes to life threatening diseases. Diseases are easily transmitted by accidental ingestion or through skin contact, particularly if the skin is broken. Avoidance of direct contact and good personal hygiene are the best protection from these hazards.

MISCELLANEOUS SITE CONTROL PROCEDURES

PLAN SIGN-OFF

(Please sign and date. See page 3 for Acknowledgment and Approval scope.)

SS/PM:_____

HSC:_____

Attachments:	Attachment A	Site Inspection Log
	Attachment B	Health and Safety Briefing/Site Orientation Record/Hazard Communication
	Attachment C	Subcontractor's Statement of Understanding
	Attachment D	Incident Report and/or Discovery of a Potential Hazard

Attach additional information if required.

(Revised 9/97)

Attachment A
Site Inspection Log

PROJECT NAME:	LOCATION:
PROJECT NUMBER:	DATE:
PROJECT MANAGER:	COMPLETED BY:
SITE DESCRIPTION AND NATURE OF WORK:	

HAZARD COMMUNICATION
[ ]Chemical hazards identified
[ ]All containers properly labeled
[ ]MSDS/workplace notebook on site
[ ]Site safety briefing completed and documented

ACCIDENTS/EMERGENCY INFO
[ ]First aid personnel identified
[ ]Hospital location identified
[ ]Police/Fire/Ambulance phone numbers available
[ ]Incident investigation forms available
[ ]Fire extinguisher present

SANITATION
[ ]Washing facilities available
[ ]Toilet facilities available
[ ]Approved trash receptacle available
[ ]Water/refreshments available

STORAGE
[ ]Tools/Drill tooling/supplies safely stacked to prevent rolling or collapse
[ ]Work areas and passage ways kept clear

HOUSEKEEPING
[ ]Work areas clean and orderly
[ ]Storage areas clean and orderly
[ ]Combustible scrap/debris removed regularly
[ ]Waste containers of flammable or toxic materials covered

OVERHEAD HAZARDS
[ ]15^{ft} minimum clearance maintained
[ ]All sources of falling objects/swinging loads/ rotating equipment identified
[ ]Barriers or other methods in place to prevent injury due to overhead hazards

POSTING
[ ]Emergency phone/contact info posted
[ ]OSHA poster displayed

UNDERGROUND HAZARDS
[ ]All underground hazards identified and communicated to workers on site
[ ]Utility/Dig-Safe clearance confirmed
[ ]Clearance dates: _____
[ ]Clearance ID#: _____

EXCAVATIONS and TRENCHES
[ ]All personnel and storage at least 2^{ft} from top edge of excavation
[ ]Ladder in place
[ ]Guarding/barriers in place

VEHICULAR TRAFFIC
[ ]All vehicular traffic routes which could impact worker safety identified and communicated
[ ]Barriers or other methods established to prevent injury from moving vehicles

PEDESTRIAN TRAFFIC/SITE CONTROL
[ ]All walkways which could be impacted by site activities identified and communicated
[ ]Barriers or other methods established to prevent pedestrian injury from site activities

ENVIRONMENTAL HAZARDS
[ ]Poisonous plants/stinging or biting insects/vermin/sewage/etc. identified and communicated

COMMENTS/OTHER HAZARDS_____

_____
_____
_____
_____
_____
_____

x = OK
NA = Not Applicable

Attachment B

Health and Safety Briefing/Site Orientation Record/Hazard Communication

This is to verify that I, the undersigned, have been provided with a site (orientation) briefing, including hazard communication, regarding the safety and health considerations at _____. I agree to abide by my employer's site-specific safety and health plan and other safety or health requirements applicable to the site.

Name (Print)	Signature	Company	Date

Site (orientation) briefing conducted by: _____ Date:_____

Attachment C
Subcontractor's Statement of Understanding Regarding Health and Safety Responsibilities

Project Name: _____

Project Number: _____

In accordance with generally accepted practices, each Subcontractor engaged by ECS is responsible for all matters relating to the health and safety of its personnel and equipment in performance of the work. This includes recognition of the potential health and safety hazards associated with the work. ECS will establish a health and safety plan or program (HASP) applicable to its own employees and its own activities on site. ECS will make its HASP available to each subcontractor for informational purposes only. Each subcontractor must establish a HASP applicable to its own employees and its own activities on site.

Subcontractors who use ECS's HASP as a model for their own HASP are responsible for determining its adequacy and applicability to its own employees and its own activities on site. Subcontractors must establish their own HASP applicable to subcontractor employees and/or activities, even if modeled after ECS's HASP and deliver this HASP in clear written form to ECS prior to the initiation of on-site activities. Submittal of the subcontractor's HASP to ECS will be for informational purposes only. Review of the subcontractor's HASP by ECS shall in no way constitute approval or endorsement by ECS of the subcontractor's HASP. It is understood that protective measures specified in the Subcontractor's HASP are minimum requirements for the work.

Subcontractor warrants that all its employees that are permitted to engage in operations that could expose them to hazardous wastes, hazardous substances, or safety or health hazards have obtained the necessary health and safety training and medical surveillance as specified in the applicable provisions of OSHA:

1926.59 Hazard Communication,
1926.52 Occupational Noise Exposure,
1926.103 Respiratory Protection,
1926.65 Hazardous Waste Operations and Emergency Response;

as well as any other applicable portion of the OSHA General Industry (29 CFR 1910) and Construction Industry (29 CFR 1926) Standards. Subcontractor shall provide ECS with evidence of the necessary certification before beginning hazardous waste work subject to OSHA 1926.65 on the project site.

Should ECS become aware of subcontractor activities on site which appear to violate OSHA or other applicable safety regulations or otherwise pose an immediate and serious threat to the safety of ECS employees, subcontractor employees, other individuals on site, or members of the public, ECS may notify the subcontractor verbally and/or in writing regarding the need for corrective action. Failure to comply with either general safety practices or health and safety practices as described above may be grounds for breach and prompt contract termination. The safety requirements of the work as described above apply without regard to time, place, or presence of a ECS representative.

THE PRESENCE OF ECS PERSONNEL ON THE SITE CARRYING OUT PROFESSIONAL ACTIVITIES DOES NOT MEAN THAT ECS UNDERTAKES TO OVERSEE THE SUBCONTRACTOR'S COMPLIANCE RESPONSIBILITIES.

The undersigned agrees that he is authorized to execute this statement of understanding on behalf of their firm:

Firm: _____

Name (Print): _____ Title: _____

Signature: _____ Date: _____

Attachment D
Incident Report And/Or Discovery Of A Potential Hazard

CHECK ALL THAT APPLY: _____Hazard Identified _____Injury/Illness _____Property Damage

Project Name:_____Project Number:_____Today's Date_____

Date and Time Incident Occurred: _____Site Supervisor's Name: _____

1) Describe the incident or potential hazard:_____

_____

_____

2) Machine or tools involved:_____

3) Names of employees involved in incident:_____

4) What personal protective was being worn when incident occurred? _____

5) Please answer the following four questions. For responses marked yes, please elaborate on the lines below.

Was anyone injured? ___Yes ___No Was first aid administered? ___Yes ___No

Was medical treatment sought? ___Yes ___No Was there property damage? ___Yes ___No

_____

_____

6) What steps were taken to prevent a reoccurence?_____

_____

_____

7) What changes in process, procedure, or equipment would you recommend? _____

_____

8) If the report is for an existing or potential hazard, has the entity controlling the hazard or potential hazard bee notified in writing? _____Yes _____No

9) Additional comments_____

_____

Name and signature of person preparing this form_____

Branch Office Manager:
Corporate Director of Health and Safety:

Health and Safety Coordinator:
Other:

Note:If the space provided on this form is insufficient, provide additional information on separate paper and attach. The completed investigation repor